



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,159	02/05/2002	Hock Chuan Tan	MTI-31608	8043

22202 7590 02/20/2003

WHYTE HIRSCHBOECK DUDEK S C  
111 EAST WISCONSIN AVENUE  
SUITE 2100  
MILWAUKEE, WI 53202

EXAMINER

LE, THAO P

ART UNIT	PAPER NUMBER
----------	--------------

2818

DATE MAILED: 02/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/068,159

Applicant(s)

TAN ET AL.

Examiner

Thao P Le

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-148 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-148 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-54: draw to a stack die assembly that is classified in **class 257, subclass 565**.

II. Claims 55-148: draw to a method of manufacturing a stack die assembly that is classified in **class 438 subclass 202**.

2. Inventions I and II above are related as device and method. The inventions are distinct if it can be shown that either:

a) the product (I) as claimed can be made by another and materially different process. (MPEP 806.05(e)), or

b) the method (II) as claimed can be practiced by another materially different product or by hand.

For instance, unpatentability of the group I invention would not necessarily imply unpatentability of the group II invention, since the device of the group I invention could be made by other processes materially different from those of the group II invention.

Also, the method and device are classified under two different classes which required serious burden search.

3. Because the inventions are distinct from the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of the inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).
5. Both groups I and II in this application contain claims directed to patentably distinct species of the claimed invention. Either group I or II is elected, applicant is required to further select one of following species.
6. If group I is selected, applicant is required to select one of the following species:

Species I: Claims 1-14, 33-38, 112-119, 128-131 directed to a stacked die assembly comprising a first die, a second die, wherein the second die disposed on the first surface of the first die with the bond pads on the first die positioned within the recessed edge portion, the recessed edge portion having a height sufficient for clearance of the first bonding element extending from the bond pads of the first die.

Species II: Claims 15-32, 120-123 directed to a stacked die assembly comprising a first die, a second die, and the second die is disposed within a recess of the first die.

Species III: Claims 39-54, 132-148 directed to a stack die assembly comprising a first die, a second die, and the first die disposed in a recess of the second die.

7. If group II is selected, applicant is required to select one of the following species:

Species I: Claims 55-64 directed to a method of forming a device comprising the steps of providing a first die, a second die having a recess, mounting the first die on the first surface of a substrate, mounting the second die on the first die located within the recessed edge, the first die is in the recess of the second die, the recess edge having a height sufficient for clearance of the first bonding element extending from the first die.

Species II: Claims 65-66, 104-108 directed to a method of forming a device comprising the steps of mounting a first die on the first surface of a substrate, providing a second die and removing a portion of the thickness from the second surface of the second die along the perimeter to form a recessed edge portion, mounting the second die on the first die wherein the first die is received in the recess of the second die.

Species III: Claims 67-76 directed to a method for forming a device comprising the steps of providing a first die, a second die, mounting a first die on the substrate, mounting the second die in a recess of the first die.

Species IV: Claims 77-81, 90-94 directed to a method of forming a device comprising the steps of providing a first die, removing a portion of the thickness of the first die to form a recess, mounting the second die in recess of the first die.

Species V: Claims 82-89 directed to a method of forming a device comprising the steps of providing a first die, a second die, a third die, mounting a first die on the first surface of the substrate, mounting the second die in a recess of the first die, mounting the third die on the second die.

Species VI: Claims 99-103, 109-111, directed to a method of forming a device comprising the steps of mounting a first die on the substrate, mounting a second die on the first die whereby the first die is received within the recess of the second die.

Species VII: Claims 95-98 directed to a method of forming a device comprising the steps of providing a first die, a second die, removing a portion of the thickness of the first die to form a recess, mounting the first die on the first surface of the substrate, removing a portion of the thickness of the second die to form a recess, mounting the second die on the first die.

8. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim

is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao P Le whose telephone number is 703-605-1187. The examiner can normally be reached on M-T (8:00-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 703-308-4910. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-4015 for regular communications and 703-308-7722 for After Final communications.

Application/Control Number: 10/068,159  
Art Unit: 2818

Page 7

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Thao Phuong Le  
February 12, 2003



David Nelms  
Supervisory Patent Examiner  
Technology Center 2800